

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

TELCORDIA TECHNOLOGIES, INC.,

Plaintiff/Counterclaim Defendant,

v.

LUCENT TECHNOLOGIES INC.,

Defendant/Counterclaim Plaintiff.

**REDACTED PUBLIC
VERSION**

Civil Action No. 04-875-GMS

TELCORDIA TECHNOLOGIES, INC.,

Plaintiff/Counterclaim Defendant,

v.

CISCO SYSTEMS, INC.,

Defendant/Counterclaim Plaintiff.

Civil Action No. 04-876-GMS

**TELCORDIA TECHNOLOGIES, INC.'S ANSWER TO CISCO'S
MOTION *IN LIMINE* NO. 5A:**

TELCORDIA SHOULD BE ENTITLED TO PRESENT EVIDENCE OF:

- (1) CISCO'S SIZE AND FINANCES, AND**
- (2) CISCO'S MISDEEDS DIRECTED AT TELCORDIA DIRECTLY RELATED TO
THE PATENTS-IN-SUIT AND CISCO'S DEFENSES**

Of Counsel:

Donald R. Dunner
Steven M. Anzalone
Richard H. Smith
James T. Wilson
John M. Williamson
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.
901 New York Ave., N.W.
Washington, D.C. 20001
(202) 408-4000

ASHBY & GEDDES
Steven J. Balick (I.D. #2114)
John G. Day (I.D. #2403)
Tiffany Geyer Lydon (I.D. #3950)
500 Delaware Avenue, 8th Floor
P.O. Box 1150
Wilmington, Delaware 19899
(302) 654-1888
sbalick@ashby-geddes.com
jday@ashby-geddes.com
tlydon@ashby-geddes.com

*Attorneys for Plaintiff
Telcordia Technologies, Inc*

Dated: February 22, 2007
178107.1

I. EVIDENCE OF CISCO'S SIZE AND FINANCES SHOULD NOT BE PRECLUDED

Telcordia's arguments herein parallel its answer to the defendants' other fifth motion *in limine*, number 5B, regarding evidence of the Alcatel-Lucent merger. Specifically, evidence of Cisco's general financial health has been put at issue by Cisco's assertion that it has been economically prejudiced by Telcordia's alleged delay in bringing suit. This is particularly true in the case of Cisco, which achieved its size and financial condition through a series of well over 100 acquisitions of smaller companies (Exs. A, B), and where the timing and magnitude of Cisco's economic swings are far removed from any actions of Telcordia. (Ex. C). In connection with its "economic prejudice" argument, Cisco claims that it would have maintained a different acquisition strategy had Telcordia filed suit sooner. (Ex. D). In response, Telcordia should be entitled to point out the absurdity of Cisco's argument that it would have reversed course on such a high level corporate strategy simply due to the timing of Telcordia's suit. In other words, Telcordia should be entitled to show the jury Cisco's history of acquisitions and their value so that the jury can understand the context in which to place Cisco's makeweight claim that it would have changed its acquisition strategy based upon the timing of this case. More generally, Telcordia should be able to point out that Cisco was not economically prejudiced by the timing of the suit.

Cisco has also placed its general financial health at issue by asserting an intervening rights defense. Telcordia should be able to rebut this defense by noting that Cisco has recovered any investment in substantial preparations many times over. *Shockley v. Arcan, Inc.*, 248 F.3d 1349 (Fed. Cir. 2001); *Visto Corp. v. Sprogit Techs., Inc.*, 413 F. Supp.2d 1073, 1088-91 (N.D. Cal. 2006) ("Upon weighing the equities of intervening rights, the Court may consider various factors: . . . (6) whether the infringer has made profits sufficient to recoup its investment.")

In sum, Cisco has placed its general size and financial health at issue, and those facts are now relevant and highly probative. Fed. R. Evid. 401, 402.

II. EVIDENCE OF CISCO'S UNCLEAN HANDS SHOULD NOT BE PRECLUDED

Cisco's motion seeks unfairly to preclude Telcordia from presenting the jury with the most relevant and probative evidence of Cisco's unclean hands—a boycott of Telcordia's SRTS technology orchestrated by Cisco and others at an industry-wide forum (the ATM Forum). In support of its motion, Cisco incorrectly and

casually proclaims that "there is no support in the record" for the boycott, and reframes the issue as "Telcordia's characterization of Cisco's conduct" and Telcordia's "inflammatory accusations." In fact, there is ample evidence in the record establishing Cisco's boycott—and Telcordia has merely repeated that evidence in its trial brief, without "characterizations" or "accusations." Moreover, Cisco's position that clear evidence showing Cisco's boycott is too prejudicial to present to the jury is incorrect and should be taken in context—Cisco, under an umbrella of equitable defenses, will present the other side of the same coin to the jury by arguing that Telcordia misled an entire industry through "Telcordia's conduct" at the ATM Forum. In fairness, Telcordia should be permitted to rebut this serious and unfounded charge with a complete picture of exactly what happened at the ATM Forum and how those facts establish Cisco's unclean hands, not Telcordia's.

Cisco has employed the shotgun approach to its equitable defenses in this action—asserting laches, equitable estoppel, patent misuse, unclean hands, inequitable conduct, and intervening rights.¹ Under the vast umbrella of these theories, some of which have not been properly disclosed or developed during discovery, Cisco apparently intends to present the jury with its characterization of a wide swath of "Telcordia's conduct."² As an example of Cisco's unclear and unfocused approach to its equitable defenses:

Cisco further states that Telcordia's infringement claims are barred by the doctrine of unclean hands and/or patent misuse because Telcordia impermissibly attempted to broaden the scope of the '306, '633 and/or '763 Patents by various activities, including, but not limited to, its involvement in the standardization of certain technical specifications passed by various standards setting-bodies...

(Ex. E at 100-01). As to its unclean hands and patent misuse defenses, Cisco does not explain these "various activities" or identify "certain technical specifications" or "various standards setting bodies."

Despite Cisco's vague and obscure presentation of its equitable defenses, Telcordia is able to overcome each defense on the merits. But more fundamentally, Cisco is not entitled to any relief based upon

¹ Cisco also plead implied license and exhaustion, but has just recently—only after forcing Telcordia to address the defenses in its trial brief, statement of contested issues, and jury instructions—agreed to withdraw the defenses.

² The parties have agreed to try all equitable issues to the jury.

any of its equitable defenses under the longstanding principle that "he who seeks equity must do equity."

Koster v. Lumbermens Mut. Cas. Co., 330 U.S. 518, 522 (1947). The Federal Circuit has expressly adopted this maxim as it applies to a defendant's equitable defenses in patent infringement cases:

Even if unable to overcome the presumption, a patentee may be able to preclude application of the laches defense with proof that the accused infringer was itself guilty of misdeeds towards the patentee. This flows from the maxim, "He who seeks equity must do equity."

A.C. Aukerman Co. v. R.L. Chaides Const. Co., 960 F.2d 1020, 1038 (Fed. Cir. 1992).

Cisco most certainly has not "done equity." Most notably, in early 1995 after Telcordia disclosed its SRTS patent to the ATM Forum when the Forum was considering incorporation of Telcordia's SRTS technology into its specification for circuit emulation (CES), Cisco organized and participated in a concerted behind the scenes effort to boycott Telcordia's SRTS technology altogether, or alternatively force Telcordia to agree to unreasonably low licensing terms. Cisco's conduct is most clearly captured in contemporaneous internal emails of its employees, including Guy Fedorkow who was the Cisco employee acting as co-chair of the ATM Forum committee that drafted the CES specification (and who is also listed in Cisco's interrogatory answers as the person with knowledge about Cisco's equitable defenses relating to activity at the ATM Forum):

REDACTED

REDACTED

(Ex. F)(emphasis added). Additional Cisco emails demonstrate a continuing ongoing pattern at the ATM Forum consistent with the above-quoted email. Cisco's conduct before the ATM Forum—its specific conduct relating to Telcordia's disclosure of its SRTS patent and Telcordia's offers to license that patent on reasonable and non-discriminatory ("RAND" or "FRAND") terms—is highly relevant and probative on a number of fundamental issues in this case, including, for example, Cisco's unclean hands, Cisco's awareness of the patent and its applicability to Cisco's products (which practice the resulting ATM Forum specification), Cisco's awareness and rejection of Telcordia's reasonable license offer, and a reasonable royalty. Although Cisco may not like the evidence, it should not be precluded.

Indeed, Cisco most definitely intends to highlight "Telcordia's conduct" before standards bodies to somehow support its wide array of equitable defenses. Indeed in its trial brief Cisco notes that:

Telcordia's conduct before several different standards bodies bars Telcordia's assertion of the '633 patent. By not disclosing the fact that it had filed a patent application before standards bodies, Cisco contends that Telcordia misled Cisco to believe that it did not have any patents relevant to the SRTS clock recovery technique. Telcordia also misled Cisco and the rest of the industry to believe that it would license any patents relevant to the SRTS standards for free or at reasonably nondiscriminatory terms far less than those Telcordia is seeking.

Cisco's allegations are false—Telcordia complied with all relevant standards body policies regarding patent disclosure (indeed Cisco does not, nor can it, identify any actual standards body policy that it contends Telcordia violated), and Telcordia's license offers for its SRTS patents have always been on reasonable and non-discriminatory terms. Nevertheless, as is set forth in its interrogatory answers and its trial brief, Cisco has every intention of delving into these matters before the jury. Notably, the issues Cisco intends to raise—patent disclosure and RAND licensing—are the *exact same issues* that are raised by Cisco's inequitable treatment of Telcordia at the ATM Forum. There is no reason that the jury should be presented with only one side of the coin—particularly on an issue as important as Cisco's assertion that Telcordia has misled the entire industry

(the same industry that agreed behind the scenes, with Cisco's cajoling, to a "carefully constructed boycott" of Telcordia's technology in order to drive down royalty rates).

Indeed, in public presentations to the standards and legal communities, Cisco admits that:

SDO IPR policies address two different competition law concerns in standard setting:

(1) Patent-holder gaining market power by failing to disclose patent or refusing to license disclosed patent on FRAND terms

...
(2) "Group boycott" among participants with collective market power who extort cheap licenses from holder of valuable patents

(Ex. G). In this case, Cisco wants to malign Telcordia before the jury with unjustified and serious allegations that "Telcordia misled Cisco and the rest of the industry" as to the first point, all while precluding Telcordia from rebutting this unwarranted attack with hard evidence against Cisco on the second point. That hard evidence, however, goes directly to Cisco's unclean hands—a fundamental issue in this case.

It would be highly prejudicial and unfair to allow Cisco free reign to discuss "Telcordia's conduct" before standards groups but to preclude Telcordia from discussing Cisco's conduct before those same standards groups bearing on the same issues. The "self styled illegal boycott" that Cisco so vigorously objects to is just that—a *self styled* illegal boycott. Those are the contemporaneous words of the Cisco employee who was a co-chair at the ATM Forum and who was identified by Cisco as the person knowledgeable about the events at the ATM Forum which form the basis for Cisco's equitable defenses. The words "self styled illegal boycott" are not contentions, are not accusations, and are not characterizations. Rather, those words are evidence in this case—evidence that is highly relevant and probative on the straightforward issue of whether Cisco comes to this case having "done equity" as the Supreme Court requires. *Koster v. Lumbermens Mut. Cas. Co.*, 330 U.S. 518, 522 (1947); Fed. R. Evid. 401, 402.

ASHBY & GEDDES

/s/ Tiffany Geyer Lydon

Steven J. Balick (I.D. #2114)
John G. Day (I.D. #2403)
Tiffany Geyer Lydon (I.D. #3950)
500 Delaware Avenue, 8th Floor
P.O. Box 1150
Wilmington, Delaware 19899
(302) 654-1888
sbalick@ashby-geddes.com
jday@ashby-geddes.com
tlydon@ashby-geddes.com

*Attorneys for Plaintiff
Telcordia Technologies, Inc*

Of Counsel:

Donald R. Dunner
Steven M. Anzalone
Richard H. Smith
James T. Wilson
John M. Williamson
FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.
901 New York Ave., N.W.
Washington, D.C. 20001
(202) 408-4000

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EXHIBIT A

Year	Company Acquired	Transaction Value
1993	Crescendo Communications	\$94.5 Million
1994	Newport Systems	\$94.9 Million
	Kaipara Inc.	\$203.8 Million
	Lightstream Corporation	\$120 Million
1995	Combinet Inc.	\$114 Million
	Internet Junction	\$55 Million
	Grand Junction	\$348 Million
	Network Translation	NA
1996	TGV Software, Inc.	\$115 Million
	Stratacom, Inc.	\$4 Billion
	Telebit's MICA Technologies	\$200 Million
	Nashoba Networks	\$100 Million
	Granite Systems	\$220 Million
	Netsys Technologies	\$79 Million
	Metaplex, Inc.	NA
1997	Telesend	NA
	SkyStone Systems	\$89.1 Million
	Global Internet Software, Group	\$40.25 Million
	Ardent Communications Inc.	\$158 Million
	Dagaz	\$108 Million
	LightSpeed International	\$160 Million
1998	VWheelGroup Corporation	\$124 Million
	NetSpeed Inc.	\$236 Million
	Precept Software	\$84 Million
	CLASS Data Systems	\$50 Million
	Summa Four, Inc.	\$118 Million
	American Internet Corporation	\$56 Million
	Clarity Wireless Corporation	\$157 Million
	Selsius Systems, Inc.	\$145 Million
	Pipelinks Inc.	\$126 Million
1999	Fibex Systems and Sentient Networks	\$445 Million
	GeoTel Communications Corp.	\$2 Billion
	Aniteva Technologies, Inc.	\$170 Million
	TransMedia Communications, Inc.	\$407 Million
	StratumOne Communications, Inc.	\$435 Million
	Calista, Inc.	\$55 Million
	MaxComm Technologies, Inc.	\$143 Million
	Monterey Networks, Inc.	\$500 Million
	Corant Corporation	\$6.8 Million
	Cocom A/S	\$65.6 Million
	WebLine Communications Corp.	\$325 Million
	Tasmania Network Systems, Inc.	\$25 Million
	Aironet Wireless Communications, Inc.	\$799 Million
	V-Edis, Inc.	\$128 Million
	Worldwide Data Systems, Inc.	\$25.5 Million
	Internet Engineering Group, LLC	\$25 Million
	Pirelli Optical Systems	\$2.15 Billion
2000	Compatible Sys. and Alliga Networks	\$567 Million
	Growth Networks, Inc.	\$355 Million
	Atlantech Technologies Ltd.	\$180 Million
	JelCell, Inc.	\$200 Million
	infoGear Technology Corp.	\$301 Million
	SightPath, Inc.	\$800 Million

Year	Company Acquired	Transaction Value
2000	PentaCom Ltd.	\$118 Million
	Seagull Semiconductor, Ltd.	\$19 Million
	ArrowPoint Communications, Inc.	\$5.7 Billion
	Geyton Systems	\$800 Million
	HyNEX, Ltd.	\$127 Million
	Netiverse, Ltd.	\$210 Million
	Komodo Technology, Inc.	\$175 Million
	NUSpeed Internet Systems, Inc.	\$450 Million
	Imobile, Inc.	\$425 Million
	PhStream, Inc.	\$368 Million
	IPCell Tech and Vovida Networks, Inc.	\$368 Million
	CAIS Software Solutions	\$170 Million
	Active Voice Corporation	\$286 Million
	Radlabs, Inc.	\$295 Million
	EdO Communications, Inc.	\$155 Million
2001	AuroraNetics, Inc.	\$150 Million
	Allegro Systems, Inc.	\$181 Million
2002	Hammerhead Networks, Inc.	\$173 Million
	Navarro Networks, Inc.	\$85 Million
	AYR Networks, Inc.	\$113 Million
	Andiamo Systems, Inc.	\$2.5 Billion
	Psonic Software, Inc.	\$12 Million
2003	Okana, Inc.	\$154 Million
	SignalWorks, Inc.	\$13.5 Million
	Linksys Group, Inc.	\$500 Million
	Latitude Communications, Inc.	\$80 Million
2004	Twingo Systems, Inc.	\$5 Million
	Riverhead Networks, Inc.	\$38 Million
	Procket Network, Inc.	\$89 Million
	Actona Technologies, Inc.	\$82 Million
	Parc Technologies, Ltd.	\$9 Million
	P-Cube Inc.	\$200 Million
	NetSolve, Inc.	\$NA
	dynamicsoft Inc.	\$55 Million
	Perfigo, Inc.	\$74 Million
	Jahl Networks, Inc.	\$16 Million
	BCN Systems, Inc.	\$34 -122 Million
	Protego Networks, Inc.	\$65 Million
2005	Airespace, Inc.	\$450 Million
	Topspin Communications, Inc.	\$250 Million
	Sipura Technology, Inc. Vihana, Inc.	\$68 Million
	FineGround Networks, Inc.	\$30 Million
	Sipura Technology, Inc.	\$70 Million
	Vihana, Inc.	\$30 Million
	FineGround Networks, Inc.	\$70 Million
	M.I. Secure Corporation	\$13 Million
	NetSift, Inc.	\$30 Million
	KISS Technology A/S	\$61 Million
	Sheer Networks	\$97 Million
	Nemo Systems	\$12.5 Million
	Scientific-Atlanta	\$6.9 Billion
	Intellishield Alert Manager	\$14 Million
2006	SyPbox Networks	\$51 Million
	Audium Corporation	\$19.8 Million
	Metreos Corporation	\$28 Million
	Meetinghouse Data Communications	\$43.7 Million
	Arroyo Video Solutions, Inc.	\$92 Million
	Orative Corporation	\$31 Million
	Greenfield Networks Inc	\$46.6 Million

EXHIBIT B



no. 1-0001

Excellence in Strategic Innovation Series

Cisco Systems (A) Evolution to E-Business

"We view the Internet as a prototype of how organizations eventually will shape themselves in a truly global economy. It is a self ruling entity."

- John Morgridge, Annual Report, 1993

Cisco Systems, says president and CEO John Chambers, is "an end-to-end networking company." Its products and services enable the construction of corporate information superhighways, a driving concern of today's CEOs, seeking to become "e-business" leaders in their industries.

Defining "e-business" can prove more difficult than embracing it, however. In executive programs at the Tuck School, Professor Phil Anderson frequently asks participants, "How will you know when you have seen the first e-business within your industry?" Typically, there is little consensus. Is it mass customization? Streamlined production processes? One-to-one marketing?

Cisco's Internet Business Systems Group (IBSG), an internal consulting group, advises senior executives on information technology investment strategies. The group is closer to major corporate buying decisions than anyone at Cisco. As advocates for Cisco's equipment, group members' main struggle is identifying the benefits of becoming an e-business, which are wide, varied, and difficult to quantify. Additionally, the initial infrastructure investment is large enough to prompt many CEOs to wonder whether it's really worthwhile to become an e-business. Trying to build a business case (calculate an ROI) for making a major IT investment can be an exercise in frustration. Says Sanjeev Agrawal, a director within the IBSG, "Can you show me the ROI of going to sixth grade? The amount of time it is going to take to try to go through the logic of that is not worth it."

This case was written by Professor Philip Anderson, Professor Vijay Govindarajan, and Professor Chris Trimble, and by research assistant Katrina Veerman T'01 of the Tuck School of Business at Dartmouth College. The case was based on research sponsored by the William F. Ahtmeier Center for Global Leadership and the Glassmeyer/McNamee Center for Digital Strategies. It was written for class discussion and not to illustrate effective or ineffective management practices.

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Cisco Systems (A)

no. 1-0001

The IBSG hopes that potential customers will look to Cisco as an example of how a company can make the most of information technology. In fact, Cisco has evolved successfully from a Silicon Valley garage startup to arguably the most sophisticated e-business in the world. As of September 2000, nearly 90 percent of all orders were placed on Cisco's website, the Cisco Connection Online (CCO),¹ and nearly 80 percent of all products were built and shipped from a supply partner, without Cisco ever physically taking possession.²

The CEOs with whom the IBSG works generally have two questions about investing heavily in IT:

1. Can my corporation benefit from being an e-business to the same extent that Cisco does, or, perhaps, to a greater extent?
2. What can I learn from Cisco's transformation to an e-business that will help me transform my own corporation?

This case gives a brief overview of Cisco as it exists today, and then traces its history, focusing in particular on its evolution to an e-business.

Cisco Today

Cisco Systems provides products and services that enable the sharing of information (including data, text, voice, and video) across disparate networks. Its goal is to provide customers with a complete set of tools to help them build the most appropriate network for their needs.

Cisco identifies four major segments within its customer base:

Enterprises are large organizations with 500 or more employees and complex networking needs, usually spanning multiple locations and types of computer systems. Enterprise customers include corporations, government agencies, utilities, and educational institutions.

Service providers are firms that provide data, voice, and video communication services to businesses and consumers. They include regional, national, and international telecommunications carriers as well as Internet, cable, and wireless service providers.

Small/medium-sized businesses are defined as companies that have fewer than 500 employees, need their own networks and Internet connectivity, but have limited expertise in networking technology.

¹ www.cisco.com

² Interview with Barbara Siverts, Cisco Systems

Cisco Systems (A)

no. 1-0001

Consumers are a new market for Cisco. The company recently entered the consumer market with a variety of home networking products.

To reach its customers, Cisco sells through several channels, including the IBSG, a direct sales force, third-party distributors, value-added resellers, service providers, and system integrators.

Cisco originally was founded as a router company, but as the corporation evolved, so did its products. These range from simple bridges and routers to optical switches, software, and even services. All of the products are scalable and easy to upgrade, allowing Cisco to provide customers with maximum possible flexibility when designing their networks.

Cisco's product offerings are divided into the major categories described below (*see also Exhibit 1*):³

Routing is a foundation technology for computer networking. Cisco routers move information from one network to another, applying intelligence in the process to ensure the information reaches its destination securely and in the fastest way possible.

LAN-Switching (Local Area Network Switching) products help users migrate from traditional shared LANs to fully switched networks that support the varying levels of flexibility and cost effectiveness required for desktop, workgroup, and backbone applications. Cisco solutions support most popular networking technologies, including Ethernet, Gigabit Ethernet, Token Ring, TCP/IP, and Asynchronous Transfer Mode (ATM).

WAN-Switching (Wide Area Network Switching) products extend this functionality over long distances.

Access solutions provide remotely located individuals and groups with the same connectivity and information access they would have if they were located at their company's head office. Integrated Services Digital Network (ISDN) remote-access routers, dialup access servers, Digital Subscriber Line (DSL) technologies, and cable universal broadband routers provide telecommuters and mobile workers with Internet access and branch-office connectivity.

SNA (Systems Network Architecture) LAN integration products allow modern LANs with open network architectures to be integrated with IBM legacy systems based on SNA standards. (In the 1990s, most large organizations had both LANs and older IBM mini and mainframe computing systems.)

Internet appliances improve a network manager's ability to cope with challenges posed by the growing popularity of the Internet, such as network traffic volume and

³ Cisco.com and most recent 10K, July 31, 1999.

Cisco Systems (A)

no. 1-0001

network address shortages. These include firewalls, which prevent unauthorized access to a network; products that scan, detect, and monitor networks, looking for security risks; virtual private networks (VPN); cache products; and load-balancing products.

Cisco IOS Software is a networking software product that has been deployed across Cisco Systems' products to provide intelligent network services, such as Quality of Service, load-balancing, and multicast functions that enable customers to build flexible network infrastructures. These intelligent network services also support next-generation Internet applications.

At the top of Cisco's organization structure is John Chambers, president and CEO. His direct reports include Mike Volpi, chief strategy officer, Larry Carter, chief financial officer and Pete Solvik, chief information officer. More than 30 senior vice presidents report to them. Cisco also boasts a very active board of directors which includes former CEO John Morgridge and venture capitalist Don Valentine.

Cisco's Evolution**Early History**

Cisco was founded by Stanford University computer scientists Sandy Lerner and Leonard Bosack, who recognized the need for large-scale computer networks based on industry-standard technologies.⁴ Lerner directed computer facilities at Stanford Business School, and Bosack directed Stanford's computer science department. While at Stanford, both recognized the inefficiency of the existing computing infrastructure which, in 1982, had 5,000 different on-campus computers and 20 incompatible email systems.⁵ With so many mismatched technologies, employees and students found it difficult to share information electronically.

Lerner and Bosack enlisted several other Stanford employees and set out to build a better system:

"...[W]orking without permission or an official budget, [they] first created the interface by which they could connect the DEC minicomputers to a bootleg Ethernet network. The network consisted of a few miles of coaxial cable. The guerrilla team pulled wires through manholes, and sewer pipes—everywhere that made sense.

"The project was a success. The router enabled the connection of normally incompatible individual networks. It allowed data to be read

⁴ Cisco Annual Report, 1990

⁵ David Bunell, *Making the Cisco Connection: The Story Behind the Internet Superpower*, pp. 4 and 5

Cisco Systems (A)

no. 1-0001

by any computer in the network, even across different operating systems. Soon enough the bootleg system became the official Stanford University Network”⁶

Shortly after their campus-wide success, Lerner and Bosack left Stanford to start their own company. Initially, they custom built routers in their living room. They called their products ciscos, a name derived from the last five letters of San Francisco. A rendition of the Golden Gate Bridge became their logo. By 1986 they had outgrown their living room and were forced to move to an office in Menlo Park, California.

Until this point, the company relied heavily on word-of-mouth referrals. Most customers were former colleagues from Stanford and were connected via an early version of email. Lerner and Bosack began using email as a promotional medium to supplement the referrals. In doing so, Cisco quickly developed a solid reputation among academic “nerds.” Soon they were using email as a medium for technical and general customer support. The partners also created *Packet*, a magazine focused on “linking customers to Cisco and delivering complete coverage of cutting edge trends and innovation.”

Lerner and Bosack recognized that they needed to expand and enter new markets, and that this would require additional funding. After visiting 75 venture capital firms, Cisco closed its first round of \$2.5 million in 1987 with a single investor—Don Valentine of Sequoia Partners.

Valentine had a history of backing winning companies, including Apple and Crescendo. Other venture capitalists were unconvinced that Lerner and Bosack, technical wizards who had no experience building a company, could turn Cisco into a success without time-intensive senior-level guidance. But Valentine believed, and took a large gamble. He not only underwrote the initial investment but attracted top-notch executives to the company. Among the most influential of these was John Morgridge.

The Morgridge Years

Valentine hired Morgridge from Grid Systems in 1988 to be president and CEO of Cisco. Unfortunately, he did not consult either of Cisco’s founders before he acted. The summary demotion of Lerner to customer service VP and Bosack to chief technology officer generated stress between them and the new chief executive officer. Soon the entire company was feeling the strain. Morgridge tried to address the problem by hiring a company psychologist, but even that failed to extinguish the simmering tension.

While the four principals—Lerner, Bosack, Morgridge, and Valentine—agreed that Cisco’s goal was to please its customers, they disagreed on almost every aspect of how

⁶ Ibid, p. 6

Cisco Systems (A)

no. 1-0001

to accomplish this. Unable to overcome their differences, Lerner agreed to leave Cisco in August 1990, and Bosack left not long after. By 1993 both founders had sold all their Cisco stock back to the company. (Lerner eventually left the high-tech world altogether to establish a cosmetics company called Urban Decay.)

Alone at the helm, Morgridge set some changes in motion. He modified the name of the company from cisco to Cisco, for example, basing his decision on customer feedback. He also clamped the lid on spending, requiring all employees to fly tourist class and to limit their expenditures. His frugality and commitment to maximizing customer satisfaction—attributes upon which the company had been founded—paid off. Cisco's annual revenues leaped from \$1.5 million in 1987 to \$70 million by the end of fiscal year 1990 (*see Exhibit 2 for summary financials*).

As the company grew, Morgridge sought out executive team members who supported his ideas. In 1991 he hired John Chambers to be senior vice president of business development. It was clear that Chambers eventually would succeed Morgridge as CEO.

John Chambers

John Chambers graduated second in his high school class, attended Duke University, and earned a law degree from West Virginia University and an MBA from Indiana University—all despite suffering from dyslexia.

Chambers subsequently worked for IBM and Wang—experiences he credits with shaping his leadership style. At IBM, for example, he was once given a poor evaluation after meeting nine out of ten self-determined objectives. As a result, he tends to focus on a few achievable goals. At Wang he had to oversee the layoffs of more than 4,000 people,⁷ an experience he vowed never to repeat.

Shaped by these experiences, Chambers had cultivated a coaching, hands-off leadership style by the time he arrived at Cisco. He encouraged other executives to lead, to make good decisions, and to take risks willingly:

“I tell my own leaders that you’ve got to have mavericks in Cisco—you’ve got to have people who challenge you. However, the mavericks have to follow within reasonable bounds the course and direction of the company. So I would take a gamble on Dennis Rodman if I felt that I had the team that could help him play within the framework of their capability.”⁷

⁷ *LAN Times*, 7/08/96. Interviewed by Editor in Chief Leonard Heymann, Executive News Editor Jeremiah Caron, and Senior Writer Michelle Rae McLean

Cisco Systems (A)

no. 1-0001

Teamwork, risk, responsibility, and especially customer satisfaction make up Chambers's resounding refrain. Today most employees who have met him agree that Chambers is the man they most admire at Cisco. However, all also agree that Cisco could not have become the company it is today without its early adoption of the Internet and Internet-related technologies.

Early E-Business Initiatives Under Morgridge and Chambers

In 1991 Cisco launched an official Internet site, primarily dedicated to company and product information. Cisco also worked hard to improve its non-Internet-based customer support. To meet demand, it:

1. Hired more engineers as quickly as possible, growing the engineering staff at 160 percent a year.
2. Extended telephone support hours from 6:00 A.M. to 6:00 P.M.
3. Established an internal system to prioritize telephone calls.
4. Integrated remote network diagnostics into its support package.
5. Experimented with different customer support projects, including SMARTnet, a package of the most popular service options, and improved access to service information.
6. Trained customers, offering 21 networking classes and teaching close to 400 people how to service their own networks in 1991.

That year—1991—Cisco boasted 50 percent of the internetworking market⁸ and, despite its new initiatives, struggled to keep up with the 300 calls per day it was receiving.

Nineteen ninety-one was also a tumultuous year at the executive level. In addition to Chambers' arrival, the VP of Finance resigned and was replaced.

In 1992 Cisco's market share increased to 85 percent, complicating efforts to manage customer service requests. The company began offering consultation services in addition to its customer-training programs. It also set up electronic bulletin boards. This foray into online technical assistance was not embraced initially, but Cisco realized that electronic dissemination of knowledge could help ease the burden on its engineers and customer service representatives. The company was undergoing growing pains and sought to alleviate them by finding other ways to leverage information technology.

⁸ *Boston Globe*, November 3, 1991.

Cisco Systems (A)

no. 1-0001

In 1993 Cisco began using a Telnet site for tech support. Customers, generally engineers, could log on and download software updates, check manuals, and even email Cisco employees with questions. The company's 1993 annual report stated, "Communications, flowing through internetworks, built largely with Cisco technology, are truly the lifeblood of our enterprise."⁹ More than 5,000 visitors a month were logging in. Still, no one could predict that by 1997, Cisco would sell over half its products across the Internet.

Cisco Comes of Age

By the end of fiscal year 1993, Cisco boasted an average annual growth rate of over 270 percent, revenues of \$649 million, a net margin of 26 percent, and 1,000 employees. It was no longer a niche technology company.

Morgridge recognized Cisco needed to revisit its goals. He asked several key executives, including John Chambers and then-CTO Ed Kozel, to write a formalized business plan, the first in Cisco's nine-year history. This business plan outlined four strategic goals¹⁰:

1. Provide a Complete Solution for Businesses
2. Make Acquisitions a Structured Process
3. Define the Industry-wide Networking Protocols
4. Form the Right Strategic Alliances

In order to achieve these directives and continue its phenomenal growth rate, Morgridge knew that Cisco would have to hire many more talented employees—even increasing the already high headcount growth rate. Unfortunately, talented employees were becoming hard to find. The search for personnel acquired some urgency when customer service ratings for Cisco dipped to an all-time low.

Morgridge and Chambers decided to ask their customers for advice. At the suggestion of Boeing, Cisco bought Crescendo, a 60-person firm in Sunnyvale, California, that provided "high speed switching solutions for the workgroup."¹¹

The acquisition of Crescendo provided some relief, but it was not an easy acquisition from a technical standpoint. Cisco's Unix databases were state-of-the-art, but the systems and information were unconnected and not appropriately scalable. Until 1993 all IT had been funded based on a company-wide budget of 0.75 percent of sales. While this allowed the IT department to service immediate needs, and to patch

⁹ Cisco Annual Report, 1993

¹⁰Bunell, David, *Making the Cisco Connection: The Story Behind the Internet Superpower*

¹¹ John Chambers in Press Release, September 21, 1993

Cisco Systems (A)

no. 1-0001

existing systems, it was totally inadequate for an acquisitive, half-billion-dollar company predicted to grow by more than 50 percent per year.

Chief Information Officer Pete Solvik recognized the technical problems Cisco was facing. He and another senior executive, Doug Allred, approached the board of directors during a board meeting in 1993 and asked if they thought the IT funding mechanism was appropriate. The directors acknowledged that they had no idea and tasked the two officers to research other possibilities.

What they came up with was nothing short of revolutionary. Allred and Solvik implemented a system which delegated authority for IT expenditures to individual business units, not administrative executives in a head office. They named it the Client Funded Model (CFM). It enabled Cisco's business units to make technology spending decisions where such investment would support customers and directly increase sales.

Most companies funded IT as a percentage of revenues. Typically, the IT department reported as a cost center directly to the chief financial officer. Projects typically were evaluated based on reducing the cost of doing business, not on improving sales, customer satisfaction, or employee retention.

With the CFM, only core IT infrastructure spending was centralized and spent out of general overhead accounts. By redistributing responsibility for IT costs, Cisco aligned IT spending with its corporate goal—doing everything possible to support the customer. The changes outlined by Solvik and Allred were as follows:

- IT would report to a newly formed Customer Advocacy (CA) group, which Doug Allred would lead.
- Managers would be encouraged to proceed with any reasonable project, as long as it improved customer satisfaction.
- While managers would be empowered to make decisions on what projects would get funded, IT would decide how to implement them.
- Cisco's internal network would play a strategic role in providing the connectivity necessary for business units to build applications creatively.

The Big Leap

The last item on this list led to a major decision. Solvik recognized that the network infrastructure at Cisco needed a tremendous upgrade if managers were to meet their customer satisfaction goals. The modifications would cost millions, and Cisco was famous for its padlocked coffers. Nevertheless, Pete Solvik proposed the upgrade to the board.

Cisco Systems (A)

no. 1-0001

In early 1994, Cisco's systems broke down and the company was forced to close for two days. In the wake of this and several other small crashes, the board made an unprecedented decision and approved Solvik's proposal, a \$15 million Oracle ERP system. (This investment *alone* was 2.5 percent of 1993 revenues, more than three times the previous year's IT budget. Total budget for IT upgrade exceeded \$100 million.) The Oracle system was to become the backbone of Cisco's e-business. Not only did it integrate all of the Unix servers, it also provided Cisco with a centralized information source.

Morgridge made it clear to Solvik that his career depended on the successful implementation of this initiative. Solvik ultimately received a tidy bonus for his work.

Subsequent E-Business Initiatives

Once the ERP system was in place, Cisco revisited its worsening customer service problem. Despite an enviable ability to attract talented engineers and call center representatives, the company was unable to hire enough of them to support its growth rate. Customers increasingly complained of inadequate technical assistance.

In response, Cisco enhanced the Cisco.com site and launched the Cisco Information Online (later named Cisco Connection Online). The company also added a Technical Assistance Center (TAC) to the site and posted a bulletin board where customers could solve technical problems. Additionally, it published a list of product faults and remedies.

The site was a huge success. It saved Cisco time as well as the cost of hiring additional employees, and it saved customers the time and hassle of making a phone call. Instead of dialing into a busy support line, they could log on to the website, browse up-to-date information, and fix most problems on their own without waiting to talk with a technician. Cisco's customer service ranking once again began to improve.

Early in 1995, under Chambers's direction as the newly installed CEO, Cisco moved from Menlo Park to a new campus in San Jose. Chambers had chosen an area close to the highway with room to expand. The new Cisco buildings were high-tech architectural marvels, and Chambers had spent the money necessary to ensure that they would scale. Each of the four buildings was wired for state-of-the-art connectivity and each was identical.

Cisco also began to look for other ways to leverage its website. The sales force complained that they were constantly asked by customers to perform mundane tasks, such as re-printing a customer invoice. In response, in 1995, Cisco expanded the online offerings and allowed customers to reprint invoices, check the status of service orders, and even configure and price products. This initiative was described in Cisco's 1995 Annual Report:

Cisco Systems (A)

no. 1-0001

Cisco Connection – a family of online and CD-ROM based services introduced during late [1995] provides our worldwide customers, partners and employees with easy and efficient access to the latest information from Cisco.¹²

As the website was integrated into the ERP system, customers were able to access more information. For many Cisco employees, it meant an end to data entry—a welcome reprieve.

The IT department began to experiment with other ways to leverage the power of the Internet. The department's efforts led to three separate Internet initiatives: Cisco Connection Online (CCO, for customers), Cisco Employee Connection (CEC), and Manufacturing Connection Online (MCO) [see Exhibits 3A, 3B, 3C for screen shots].

The Cisco Connection Online

By early 1996, customers could access technical help, reprint invoices, and search through product information without assistance, but they still had to talk with a sales rep whenever they wanted to buy something. Much of the time, this involved an initial phone call to place an order and more phone calls to make sure the order was accurately entered into the order queue. Only 75 percent of orders were entered correctly; the remaining 25 percent had to be re-entered.

As a result, Cisco started to think about how it could use the web as a purchase tool. In 1995 the company appointed an Internet Commerce Group (ICG) to look at different ways to leverage the Internet. The project was divided into three phases.

During Phase 1, the ICG analyzed the existing site and expanded its product offerings to include order-status capabilities, product configuration, and pricing as well as installation guides and tech tips. The group also analyzed call center calls and other customer requests. Research showed that most phone calls were focused on information housed in the Oracle ERP system.

In Phase 2, the ICG concluded that it could redesign the website to allow customers to configure and buy products. The e-commerce site was completed and launched in July 1996. By 1997, 27 percent of all orders were placed using the Internet, a much higher percentage than the ICG had expected. In addition, the CCO was rated among the top ten technology and computing websites by *Interactive Magazine*. Cisco described the site in its 1996 annual report as follows:

[Cisco Connection Online] provides customers, partners, suppliers, and employees with easy desktop access to a wealth of product

¹² Cisco Annual Report, 1996

Cisco Systems (A)

no. 1-0001

information, software documentation, technical assistance, customer service applications, and interactive training.¹³

Within the first four months online, Cisco had sold \$75 million worth of products on the Internet. The site was simple but sophisticated enough to ensure products were accurately configured. As a result, Cisco was able to drop its customer-order error rate from 25 percent to 1 percent.

By 1997 70,000 registered users were accessing the site 700,000 times a month. Although Cisco believed that the site was not as user-friendly as it could be, 60% of Cisco's technical support from customers and resellers was now delivered automatically via the web, saving Cisco close to \$150 million a year. Better still, Cisco's customer satisfaction ratings were improving, Cisco was seeing internal productivity gains of 60 percent, and customers were seeing productivity gains of 20 percent. Nonetheless, Cisco wasn't satisfied.

In Phase 3, Cisco set out to address other concerns, including integrating its site with customers' ERP sites. Cisco attempted to produce a software product in house but, after an initial investment, discovered other companies were entering the marketplace with better products. After careful research, Cisco settled on a partnership with Ariba and Commerce One. As of this writing, Cisco was working with Ariba to expand its base offerings and make the product compatible with the RosettaNet standards.¹⁴

The CCO underwent considerable revisions and updates. Each time Cisco redesigned its website, it worked closely with the Internet Commerce Advisory Boards (ICABs). ICABs, which included both Cisco employees and customers, were used to perform market research on customers globally.

As of August 2000, the site had 10 million pages and was available worldwide. The first few page levels were translated into various languages, such as Japanese. However, all prices were quoted in the appropriate currency, based on an accurate exchange rate.

The Cisco Employee Connection

The Cisco Employee Connection (CEC) is Cisco's intranet site. Initially, it was designed to hold company information and act as an internal newsletter. When launched in 1995, it consisted only of a bulletin board of information, simple search engines, and email. But as the CCO grew in popularity and function, Cisco's tech department started toying with a more advanced site.

¹³ Ibid

¹⁴ RosettaNet is an industry consortium that develops standardized protocols and platforms for facilitating B2B e-commerce.

Cisco Systems (A)

no. 1-0001

At the time, the Human Resources department was swamped, and was handling a variety of inconsistent HR forms manually. As such, the team working on the CEC first attempted to consolidate and digitize a number of the forms in an effort to streamline and speed up the hiring process. But Java had not yet debuted on the high-tech landscape and the project proved too unwieldy and time consuming for Cisco to implement. After months of painstaking effort, the team gave up.

Not long after, the team tried to "webify" the process of expense reimbursement. This time, they combined the lessons from their first efforts with fresh ideas and new technologies, like Sun's Java.

The team faced several seemingly insurmountable technical issues, such as linking expense approvals with the American Express corporate card systems, as well as significant internal resistance to change. Senior executives, who were responsible for approvals, demanded that any new system prove easier to use than the old paper-based system. Consequently, many approvals were eliminated. Cisco's software engineers were forced to design the program internally because there were no off-the-shelf programs that could handle the task. They succeeded. Cisco employees were able to submit expenses online and get reimbursed by direct deposit within a few days. (Four years later, Cisco was prepared to ditch its own system in favor of externally designed programs, convinced that software companies would be better able to build scalable solutions.)

Following the successful launch of the new expense reporting system, the IT department revisited the task of digitizing many HR processes. This time they were successful. All HR forms—for new hires, health insurance, donations, 401K, etc.—were included on the CEC, and directly integrated into the ERP system.

The CEC also enabled employees to access certain personnel information, including a directory of all Cisco employees, their calendars, and their positions within the company, including to whom they reported. If they wished, employees could upload additional information, including their photographs.

Despite the site's usefulness, most employees used the CEC sparingly. Few chose it as their home page or included it on their top ten view list. An internal poll to discover what employees were looking at revealed the number-one favorite was My Yahoo!, which allowed people to customize their pages.

Instead of banning Yahoo, ignoring the problem, or forcing all employees to have the CEC as their home page, Cisco approached Yahoo! about setting up a customized My Yahoo! website for Cisco employees. The site was intended to allow Cisco employees to view sports scores, horoscopes, weather, and other areas of interest, in addition to automatically uploading certain Cisco-only announcements. After several iterations, Yahoo! created a design that Cisco adopted almost immediately. The company was

Cisco Systems (A)

no. 1-0001

able to give its employees the content it wanted them to have, along with the content the employees wanted to have.

The Manufacturing Connection Online (MCO)

Cisco's Manufacturing Connection Online (MCO) has been crucial in allowing Cisco to scale. Just as Cisco had problems hiring enough engineers and customer service reps, it also had long been plagued by problems scaling its manufacturing operations sufficiently to meet the surging demand for its products. Faced with a choice of limiting growth or outsourcing manufacturing, Cisco chose to outsource.

Originally, Cisco used contract manufacturers. Cisco forwarded orders, warehoused the components, and performed final assembly and testing before shipping finished goods to its customers. But warehousing and maintaining a large inventory were expensive. In order to cut inventory costs and improve customer delivery times, Cisco began to cultivate closer relationships with its suppliers. It sought integrated partners, not just suppliers.

Cisco asked these partners and contract manufacturers to integrate and network their supply chains with its own. The result was an automated order fulfillment process. The MCO, launched in June 1998, became the facilitator, allowing Cisco's partners direct access to customer information, sales projections, and product specifications. Partners could also alert Cisco to work stoppages, part shortages, and other issues.

Once a customer placed an order on the Cisco.com site, the manufacturing partner was immediately notified. Each order was issued a specific order number and product number, and all orders were customized. Once the manufacturing partner received the information electronically, the order was sent to the assembly line and placed in the queue—all without human intervention. The manufacturer then built the product to order.

Initially, Cisco preferred to retain the final testing and certification processes on site. However, with the advance of competitors like Nortel, time-to-market and delivery speed became critical differentiators. Again, Cisco looked to the Internet to improve its competitive advantage.

This new impetus inspired the creation of the Cisco Systems Auto Test. The system tested products to ensure they were up to Cisco's specifications and ready to ship. This usually took less than three days. Once an order was ready for shipment, Federal Express, Cisco's shipping partner, was automatically alerted, the order was assigned a shipping number, picked up at the manufacturer, and delivered by Federal Express to the customer. In the event of an assembly line problem or auto test concern, the manufacturer immediately alerted Cisco through the MCO, which then alerted the customer.

Cisco Systems (A)

no. 1-0001

Multiple products that needed assembly by different manufacturers or required completion at different times were delivered all at once or as ready, according to the customer's preference. Federal Express's Merge-In-Transit service managed all shipping regardless of location to ensure orders were delivered to the customer's specifications. Neither Cisco nor the contract manufacturer was responsible for the order once Federal Express picked it up.

Because the MCO and the CCO were integrated, customers could check on their order's status at any time. The CCO also provided installation support for customers who requested it. When there were problems that required spare parts, Cisco's depot partners were able to handle them, in nearly every case.

Additional E-Business Functionality

In addition to the Cisco Connection Online, the Cisco Employee Connection, and the Manufacturing Connection Online Cisco's accounting and HR departments boasted an impressive level of automation. Cisco executives could view up-to-the-minute sales figures from around the world at any time. Additionally, Cisco was able to close its books within a day. Automated functions within HR included the capability to accept job applications online and to review and sort candidates by critical variables, such as skill level or former employer.

Flexibility was as critical as functionality to Cisco's e-business systems. When the company reorganized its R&D and marketing departments from multiple business units to only three, the required changes to e-business applications were completed in less than 60 days at a cost of under \$1 million.¹⁵

Summary

Cisco was an early leader in adopting innovative techniques and technologies to service customers. Its ability to harness information technology to streamline its own business made it a leading-edge e-business.

The company used email to communicate with customers as early as 1984. Once the Internet was deregulated in 1993, Cisco adopted the Internet to process and service orders, solve technical problems, support customers, integrate manufacturing and distribution, and streamline employee services.

Neither Cisco, nor the members of the Cisco team have looked back since. In 1995 John Chambers assumed the helm as CEO and John Morgridge moved up to chair the board. During the last five years of the twentieth century, Cisco continued to grow at an average rate of over 40 percent a year, eclipsed the market cap of even GE and

¹⁵ *Net Ready*, p. 252.

Cisco Systems (A)

no. 1-0001

Microsoft in 2000, and acquired more than 70 companies to further develop and expand its market presence, product offerings, technological expertise, and headcount (see *Exhibit 4*). Along the way, Cisco reinvented itself as an e-business, saving more than \$800 million a year (\$350 million of which was attributed to the Cisco Connection Online¹⁶), a sizable portion of their 2000 net earnings of \$2.6 billion.

Discussion Questions

1. Can other corporations benefit from investing in e-business functionality to the same extent that Cisco has?
2. What can other corporations learn from Cisco's approach to guiding the e-business transformation?

¹⁶Ibid, pp. 258, 268

Cisco Systems (A)

no. 1-0001

Exhibit 1**Cisco's Market Segments**

Market Segments		
Enterprise Service Provider Small/Medium Business		
LAN Switching	Routing	Access
*Ethernet	*12000	*Dial
*Fast Ethernet	*7500	*ISDN
*Gigabit Ethernet	*7200	*xDSL
*Token Ring	*4000	*Cable
*ATM	*2800	*Wireless
	*3600	
WAN Switching	SNA/LAN Integration	Internet Appliances
*Frame Relay		*PIX/Centr
*ATM	*Backbone	*Firewall
*Voice/Data/Video	*Access	*Web Server
	*Data Center	*Local Director
		*Distributed Dir.
		*Web Cache

Source: Cisco Systems

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no. 1-0001

Exhibit 2

Summary Financials for Cisco

YEAR	1986	1987	1988	1989	1990
Revenues	129	1,485	5,450	27,664	69,776
Revenue Growth		1051.2%	267.0%	407.6%	152.2%
COGS (as % of Revenues)	33.3%	55.3%	44.9%	42.2%	34.3%
Gross Margin	66.7%	44.7%	55.1%	57.8%	65.7%
R&D	38.8%	14.0%	14.0%	7.7%	8.8%
Sales and Marketing	19.4%	7.6%	15.2%	19.6%	20.9%
General and Administrative	36.4%	14.3%	15.8%	6.1%	5.3%
Operating Margin	-27.9%	8.8%	10.2%	24.4%	30.7%
Net Profit Margin	-25.6%	5.6%	7.1%	15.1%	19.9%
Employees				115	174
YEAR	1991	1992	1993	1994	1995
Revenues	183,184	339,623	649,035	1,334,436	2,232,652
Revenue Growth	162.5%	85.4%	91.1%	105.6%	67.3%
COGS (as % of Revenues)	34.1%	32.8%	32.4%	33.8%	33.3%
Gross Margin	65.9%	67.2%	67.6%	66.2%	66.7%
R&D	6.9%	7.9%	6.8%	8.0%	13.7%
Sales and Marketing	19.0%	17.8%	16.9%	16.9%	17.9%
General and Administrative	3.8%	3.5%	3.2%	3.9%	3.8%
Operating Margin	36.1%	38.1%	40.6%	37.5%	31.3%
Net Profit Margin	23.6%	24.8%	26.5%	24.2%	20.4%
Employees	254	505	882	2,262	2,442
YEAR	1996	1997	1998	1999	2000
Revenues	4,096,007	6,440,171	8,458,777	12,154,000	18,928,000
Revenue Growth	83.5%	57.2%	31.3%	43.7%	55.7%
COGS (as % of Revenues)	34.4%	34.8%	34.5%	34.9%	35.6%
Gross Margin	65.6%	65.2%	65.5%	65.1%	64.4%
R&D	9.7%	18.7%	19.1%	17.0%	21.4%
Sales and Marketing	17.7%	18.0%	18.5%	20.1%	20.7%
General and Administrative	3.9%	3.2%	3.1%	3.4%	3.0%
Operating Margin	34.2%	25.3%	24.9%	24.6%	19.2%
Net Profit Margin	22.3%	16.3%	16.0%	17.2%	13.4%
Employees	4,086	10,451	14,800	20,657	21,000

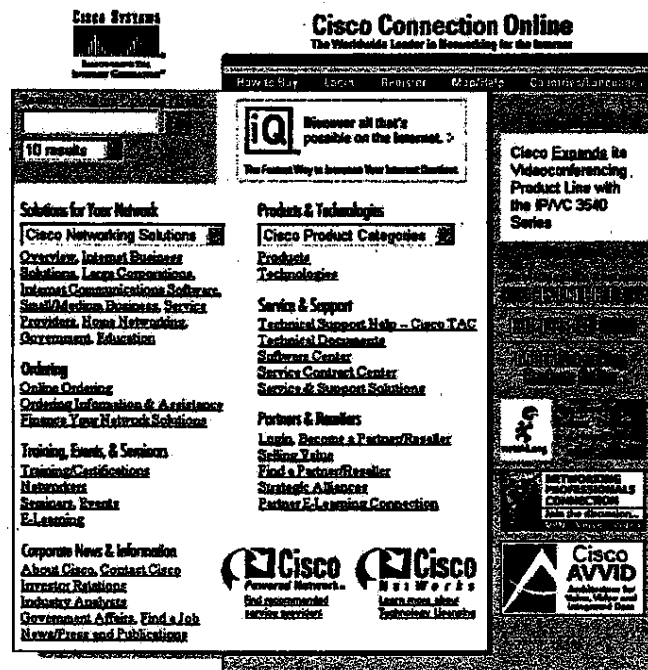
Source: Various Cisco Systems SEC Filings

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Exhibit 3A

Cisco Connection Online



Source: Cisco Systems

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Exhibit 3B

Cisco Employee Connection

CEC | CCO | SEARCH | INDEX | SUPPORT | FEEDBACK | DIRECTORY

Cisco Employee Connection

Office of the President

Business Functions
Lines of Business
Business Units/Divisions

My Quick Links

- Cisco Directory
- Floorplans & Maps
- Mailbox (Mailing Lists)
- Send a page
- BSG
- Travel
- Meta (Expenses)
- E-B-C
- I.R.C.
- HR (Human Resources)
- Payroll
- Workplace Resources
- Product Finder
- Emp. Computer Services

Employee News [view more news](#)

Customer Satisfaction

CEC
67,812
42,312
12-05 Aug 8

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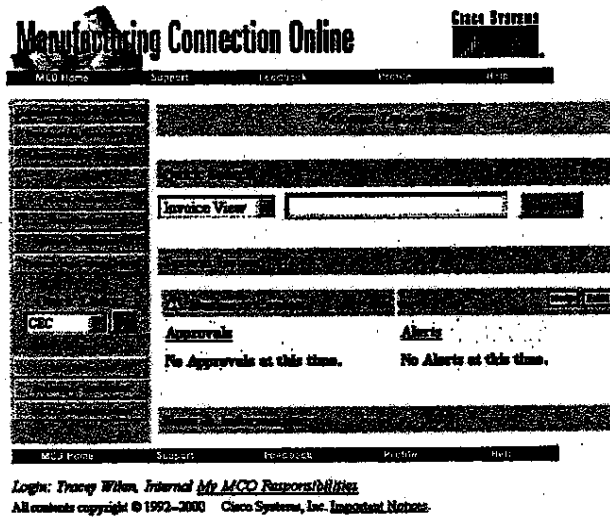
Source: Cisco Systems

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Exhibit 3C

Manufacturing Connection Online



Source: Cisco Systems

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Exhibit 4
Cisco's Acquisition History

Date	Company	Product
Sept 2000	Vovida Networks, Inc.	Voice over IP software
Sept 2000	IPCell Technologies, Inc.	Voice and data integrated access software
Aug 2000	FixStream	Digital video streaming servers and software
Aug 2000	Ipmobile, Inc.	Software systems for 3G wireless service providers
July 2000	NuSpeed Internet Systems, Inc.	IP-enabled data storage networks
July 2000	Komodo Technology, Inc.	Voice over IP devices
July 2000	Netiverse, Ltd	Internetworking hardware with content-based switching intelligence
June 2000	HyNEX	IP over ATM access devices
May 2000	Qeyton	Dense wave-division multiplexing optical networking hardware
May 2000	ArrowPoint Communications.	Internetworking hardware with content-based switching intelligence
April 2000	Seagull Semiconductor, Ltd	Silicon for high speed (terabit) networks
April 2000	Pentacom, Ltd	Highly reliable hardware for metropolitan IP data & voice networks
March 2000	Sightpath, Ltd	Internetworking hardware with content-based switching intelligence
March 2000	Infogear Technology Corporation	Network management software and appliances
March 2000	JetCell, Inc	In-building wireless telephony

Cisco Systems (A)

no. 1-0001

March 2000	Atlantech Technologies	Network management software
Feb 2000	Growth Netwroks, Inc	Switching fabrics (new category of networking silicon) for high-speed (terabit) networks
Jan 2000	Altiga Networks	Enterprise Virtual Private Network (VPN) solutions
Jan 2000	Compatible Systems Corp	VPN solutions for service providers
Dec 1999	Firelli Optical Systems	Optical internetworking equipment
Dec 1999	Internet Engineering Group, LLC	Optical internetworking equipment
Dec 1999	Worldwide Data Systems, Inc.	Consulting and engineering services for converged (data and voice) networks
Nov 1999	V-Bits, Inc	Digital video processing systems
Nov 1999	Aironet Wireless Communications, Inc.	Wireless LANs
Oct 1999	Tasmania Network Systems, Inc.	Internetworking hardware with content-based switching intelligence
Sept 1999	Webline Communications Corp	Customer interaction management software for e-commerce
Sept 1999	Cocom A/S	Access solutions over cable-TV networks
Sept 1999	Cerent	Optical internetworking
Aug 1999	Monterey Networks	Optical internetworking
Aug 1999	MaxComm Technologies	DSL related equipment
June 1999	StratumOne Communications, Inc.	Optical Internetworking
June 1999	Transmedia Communications, Inc.	Multiple network convergence (voice/data) equipment
April 1999	Amteva Technologies, Inc	IP-based unified communications software (voice mail, email, fax)
April 1999	GeoTel Communications Corp	Call routing solutions for distributed call centers

Cisco Systems (A)

no. 1-0001

	Corp	
April 1999	Sentient Networks, Inc	Circuit emulation services on ATM networks (links circuit-switched telephony networks and ATM data networks)
April 1999	Fibex Systems	Voice and data convergence hardware for ATM networks
Dec 1998	PipeLinks	SONET routers which can carry both circuit-switched voice and packet-switched data
Oct 1998	Selsius Systems, Inc	PBX systems for voice over IP networks
Sept 1998	Clarity Wireless Corporation	Wireless access hardware for data networks
Sept 1998	American Internet Corporation	Software for IP address management
July 1998	Summa Four, Inc.	Programmable switches which allow new features for existing telephony networks and voice over IP networks
May 1998	CLASS Data Systems	Network management software
March 1998	Precept Software, Inc	Multimedia networking software and IP/TV
March 1998	NetSpeed, Inc	DSL hardware
Feb 1998	WheelGroup Corporation	Network security solutions
Dec 1997	LightSpeed	Signaling technologies which allow voice communications over data networks
July 1997	Dagaz	DSL hardware
June 1997	Ardent Communications Corp	Access hardware for converged (data and voice) networks
June 1997	Global Internet Software Group	Network security software
June 1997	SkyStone Systems Group	SONET/SDH internetworking hardware

Cisco Systems (A)

no. 1-0001

March 1997	Telesend	DSL Hardware
Dec 1996	Metaplex	SNA to IP transition products
Oct 1996	Netsys Technologies, Inc	Network performance monitoring and management software
Sept 1996	Granite Systems	Gigabit Ethernet switching
Aug 1996	Nashoba networks	Token-ring switching solutions
July 1996	Telebit's MICA Technologies	Digital modem technology and access servers
April 1996	Stratacom, Inc.	WAN Switching equipment
Jan 1996	TGV Software, Inc	Internet software products
Oct 1995	Network Translation, Inc	Internet software products
Sept 1995	Grand Junction Networks	Fast Ethernet switching products
Aug 1995	Combinet, Inc.	ISDN networking products
Dec 1994	LightStream	ATM switching, LAN switching and routing
Oct 1994	Kaplana Inc.	Ethernet LAN hardware
July 1994	Newport Systems Solutions	Routers for remote network sites
Sept 1993	Crescendo Communications, Inc	LAN Switching solutions

EXHIBIT C

**What's New**

Cisco reported its Q2 FY2007 financial results on Tuesday, February 6, 2007, after the close of market.

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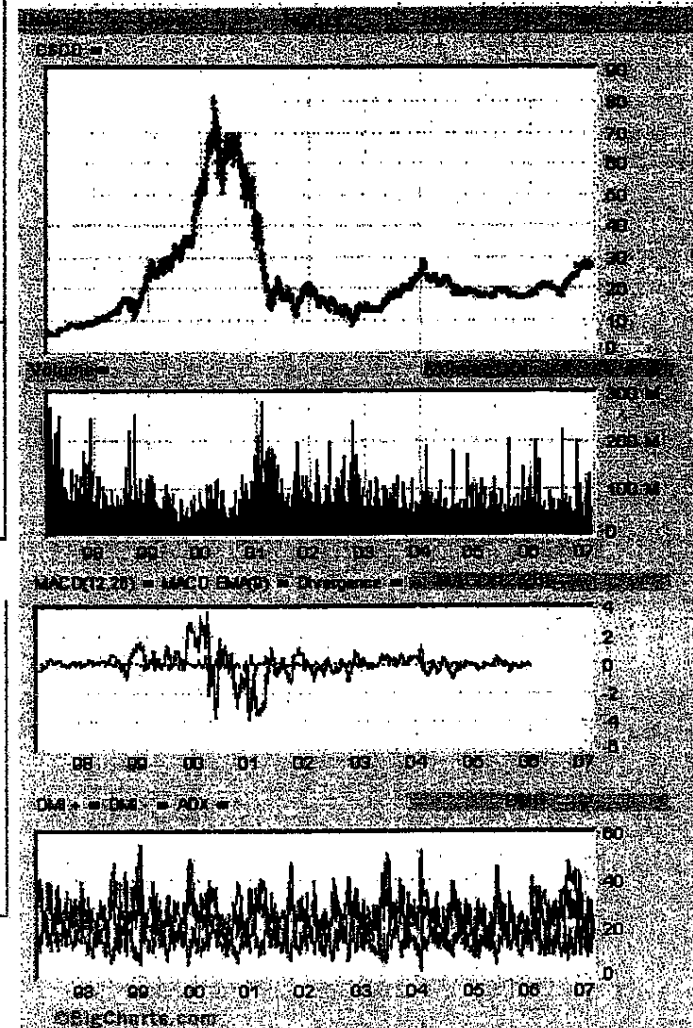
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Stock Information**Stock Chart****Symbol**

CSCO (Common Stock)

Frequency

☒ Daily

Time Frame

☒ 10 Years

Compare To

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Stock Information - Stock Chart - Cisco Systems

Page 2 of 2

Historical, current end-of-day data, and splits data provided by ET Interactive Data.

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**What's New**

Cisco reported its Q2 FY2007 financial results on Tuesday, February 6, 2007, after the close of market. Click [here](#) for details. Please click below for supporting materials:

- [Press release](#)
- [Webcast \(With Slides\)](#)
- [Slides Only](#)
- [Downloadable MP3](#)
- [Prepared Remarks](#)

Answers to some of our Investors' top of mind questions.

Investor Corner- [Please click here for more details.](#)
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Contacts

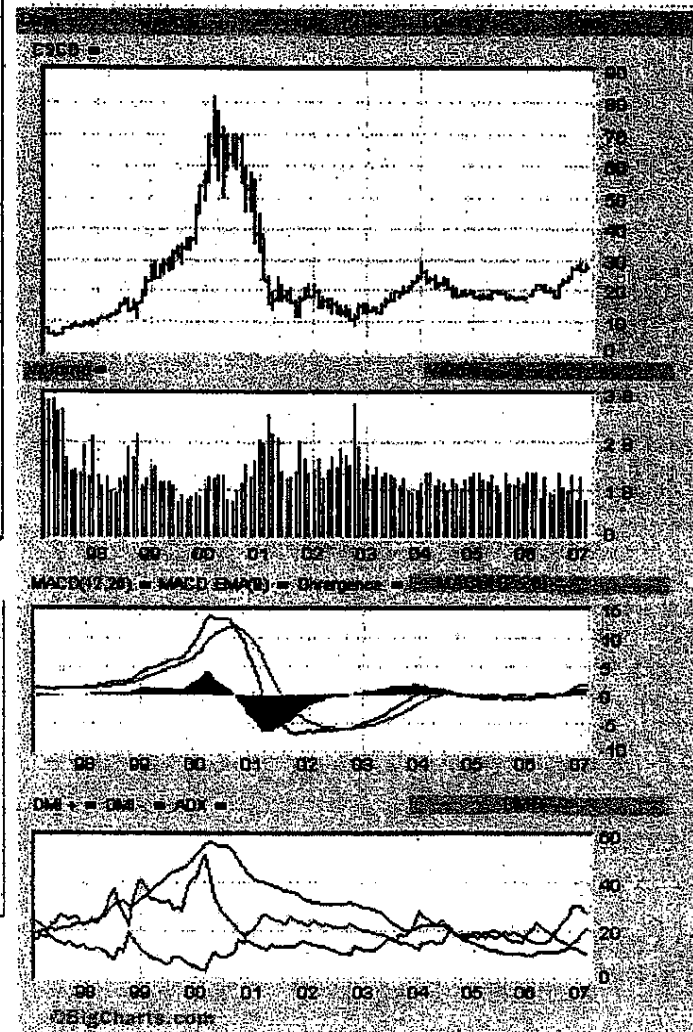
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Stock Information**Stock Chart****Symbol**

CSCO (Common Stock)

Time Frame

10 Years

Frequency

Monthly

Compare To

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Stock Information - Stock Chart - Cisco Systems

Page 2 of 2

Historical, current end-of-day data, and splits data provided by FT Interactive Data.

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EXHIBIT D

REDACTED

EXHIBIT E

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

TELCORDIA TECHNOLOGIES, INC.

Plaintiff/Counterclaim Defendant,

v.

CISCO SYSTEMS, INC.

Defendant/Counterclaim Plaintiff.

Civil Action No. 04-876-GMS

CISCO'S SUPPLEMENTAL RESPONSES TO INTERROGATORY NOS. 1, 2, 5-7, AND 9-11

Pursuant to Rule 33 of the Federal Rules of Civil Procedure, defendant Cisco Systems, Inc. ("Cisco") supplementally objects and responds to plaintiff Telcordia Technologies, Inc. ("Telcordia") Interrogatory Nos. 1-2, 5-7 and 9-11 as follows:

GENERAL OBJECTIONS AND OBJECTIONS TO INSTRUCTIONS

1. Cisco objects to each interrogatory to the extent it seeks information protected by the attorney-client privilege, the work-product doctrine, or any other applicable privilege or immunity. Nothing contained in Cisco's responses is intended to be, or in any way shall be deemed, a waiver of any such applicable privilege, doctrine, or immunity.

2. Nothing in these responses is an admission by Cisco of the existence, relevance, or admissibility of any information, for any purpose, or the truth or accuracy of any statement or characterization contained in any interrogatory. Cisco reserves all objections and other questions as to competency, relevance, materiality, privilege, or admissibility related to the use of its responses and any document or thing identified in its responses as evidence for any purpose whatsoever in any subsequent proceeding in this trial or any other action.

SONET, ATM-framed, and/or packet-based bit streams and/or use of time stamps for synchronization purposes in ATM frames.

Pursuant to Fed. R. Civ. P. 33(d), Cisco states that its sales order relating to the products Telcordia is accusing of infringement include information within Cisco's knowledge about the Cisco components purchased by each of Cisco's customers. See CSCO 0445-0001 and 0002. Cisco also produced information relating to the Cisco network elements existing in certain customers' networks. See CSCO 0697-1107 to 0697-3206.

INTERROGATORY NO. 11

Describe in detail all facts that support Cisco's contentions that this action is barred, in whole or in part, whether based on estoppel, implied license, unclean hands, laches, intervening rights, or on other grounds, including by providing at least the following information: (a) the identity of each person with knowledge or information relating to Cisco's contentions; (b) the date on which Cisco contends that Telcordia first knew or should have known of Cisco's infringement of that patent; (c) the reasons Cisco contends that Telcordia knew or should have known of Cisco's infringement of that patent; (d) the basis for any contention by Cisco that it has been prejudiced (including economic or evidentiary prejudice) by any delay by Telcordia in bringing this lawsuit; (e) any conduct by Telcordia, silence or otherwise, that Cisco asserts was misleading to Cisco, specifying in detail how Cisco relied on any such conduct; and (f) the identity of each document supporting, refuting, or otherwise relating to Cisco's contentions, or on which Cisco intends to rely as a basis for its contentions.

THIRD SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 11

In addition to its general objections, Cisco objects to this interrogatory to the extent it seeks information protected by the attorney-client privilege or the work-product

doctrine. Cisco further objects to this interrogatory as overly broad and unduly burdensome, and as vague and ambiguous. Cisco further objects to this interrogatory to the extent that it seeks information neither relevant to the claims or defenses in this litigation nor reasonably calculated to lead to the discovery of admissible evidence. Cisco further objects to this interrogatory as compound and having multiple sub-parts.

Subject to and without waiving its objections, and further to the allegations set forth in Cisco's Answer and First Amended Answer, Cisco states the following with the understanding that Telcordia has received disclosures from Alcatel and Lucent in *Telcordia Technologies, Inc. v. Alcatel*, Civil Action No. 04-874-GMS (D. Del.) and *Telcordia Technologies, Inc. v. Lucent Technologies, Inc.*, Civil Action No. 04-875-GMS (D. Del.), and this response does not necessarily repeat each fact, circumstance or contention within those disclosures.

Cisco states that any claim for damages prior to filing this action is barred pursuant to the doctrine of laches. Specifically, Telcordia and its predecessor Bellcore (collectively "Telcordia") unreasonably and inexcusably waited until July 16, 2004 before asserting the '306 and '633 Patents against Cisco, and Telcordia unreasonably and inexcusably waited until June 14, 2005 before asserting the '763 Patent against Cisco. Because Telcordia delayed bringing suit for more than six years after it had both actual and constructive knowledge of the Cisco activities it contends infringe the Patents-in-Suit, there is a presumption that Telcordia's delay was unreasonable, inexcusable, and prejudicial.

Information about the accused functionality, including detailed technical product release notes, has been publicly available through Cisco's website, Cisco's marketing and other product literature, and/or third party publications since at or around the release date of each of

the accused products. Cisco has produced extensive publicly available product documentation disclosing the accused functionality, including archival pages from its website, the information shipped with its products, and news stories. *See, e.g.*, CSCO 0643-0017; CSCO 0438-0001; CSCO 0439-0001; CSCO 0440-0001; CSCO 0441-0001; CSCO 0442-0001; CSCO 0443-0001; CSCO 0444-0001; CSCO 0643-0022 to 0643-0028; CSCO 0676-0001 to 0676-1097.

Telcordia has also produced thousands of pages of such materials, including IOS notes, establishing that it has been studying Cisco products for more than 10 years. *See, e.g.*, TELC 0258210 (1995 Lightstream ATM switches product brochure); TELC 0273715 (1997 ATM Circuit Emulation Services Port Adapter for Cisco 7200 series routers overview). Telcordia's production also includes hundreds of Cisco news stories, including articles discussing Cisco's acquisitions. *See, e.g.*, TELC 0248758 (1994 article describing Cisco's ATM Business Unit and acquisition of Lightstream).

Information relating to the release dates of each of the accused products can be found within the documents referenced above. For example, Cisco announced plans to integrate ATM technology into its routers in 1992, and Cisco's 7000 series router family was announced in January 1993. *See, e.g.*, CSCO 0676-0046 to 0049; 0676-0063 to 0064; 0676-0745 to 0746; 0676-0065. Cisco's 7000 series routers began shipping in February 1993. *Id.* In September 1993, Cisco announced that it had already tested 7000 series routers with five different vendors' ATM switches. *See, e.g.*, CSCO 0676-0045. The 7500 series routers, some of which are accused of infringement, were introduced into the market in September 1995. *See, e.g.*, CSCO 0676-0745 to 0746. Stratacom's IPX and BPX switches, which are the predecessors of the accused MGX and IGX switches, were sold in the 1980s and early 1990s, respectively. The BPX had ATM capabilities as early as 1993. *See, e.g.*, CSCO 0676-0060 to 0061.

In January 1996, one of Cisco's customers publicly announced that it was using 7500 series routers, Catalyst series switches, and a Lightstream 1010 switch. *See, e.g.,* CSCO 0676-0743 to 0744. By June 1996, Cisco was also selling 7200 series routers. *See, e.g.,* CSCO 0676-0678 to 0679. In March 1997, Cisco publicly introduced new circuit emulation modules for its 7200 series routers and the Lightstream 1010. *See, e.g.,* CSCO 0676-0916 to 0918. Cisco's 12000 series routers were also launched in 1997 (*see, e.g.,* CSCO 0676-0222), and the Catalyst 8540 switch was introduced in mid-1998. *See, e.g.,* CSCO 0676-0020 to 0021.

By September 1999, Cisco had announced its acquisition of Cerent, and demonstrated the Cerent 454, which is the direct predecessor of the accused ONS products, in a "UPSR ring." *See, e.g.,* CSCO 0676-0987 to 0988.

The accused products have been available for sale, and used in the marketplace, at least as early as each accused product's release date. *See, e.g.,* CSCO 0643-0803 to 1205. Among many other customers, the Regional Bell Operating Companies ("RBOCs") have purchased and used the accused products in their networks. Telcordia could have studied all of the products accused of infringement by simply purchasing them from Cisco. Telcordia has in fact purchased Cisco products to use as part of its own networks. *See, e.g.,* TELC 0227544 ("Telcordia is using all Cisco switches and routers."). As Zachary Gilstein, Telcordia's testing corporate designee testified, Telcordia has also purchased Cisco products, including accused 3600 and 7200 series routers, to develop network adapters to sell with its Telcordia Inventory, Telcordia Activator, and Telcordia Surveillance Manager products.

In addition, Telcordia has admitted that it established a "test bed" for studying ATM which included two Cisco 7000 routers in 1993. *See* Telcordia's Eighth Supplemental Response to Cisco's Interrogatories. Telcordia has also admitted that Vernon Anthony,

Telcordia's Director of Licensing, researched the following accused Cisco series in 2000: 7500 series, 12000 series, Lightstream 1010, Catalyst 8500 series, and ONS series. *Id.* At the time, Mr. Anthony believed certain products "likely used the technology of the '306 patent," certain products "had a SRTS timing recovery feature," and certain products had datasheets "indicating [they] complied with GR-1400." *Id.*

In 1998, Telcordia prepared a presentation identifying key features of the MGX 8220, 7500 series routers, and 3600 series routers. *See* TELC 0222544.

At least as early as June 3, 1993, Telcordia was studying Cisco's ATM over SONET products. *See, e.g.*, TELC 0209620 ("[C]isco intends to support sonnet, oc3, atm, and aal3/4 and 5 on a card which runs on their 7000 router. . . . [A]ll the segmentation and reassembly will be done in the router."); *see also* TELC 0209657 ("The router and ATM DSU together implement the ATM Adaptation Layer (AAL), with the router providing framing and convergence sublayer functions, and the ATM DSU providing segmentation and reassembly functions. . . . For ATM at SONET/SDH rates, Cisco will offer an integrated solution.").

Telcordia tested Cisco's 7000 series routers in its interoperability lab in its Red Bank, New Jersey facility at least as early as March 1994. *See, e.g.*, TELC 0210343.

In May 1998, Dave Sincoskie noted in an email that Cisco is a "big practitioner" of the '306 Patent. TELC 0188744.

Telcordia has also been studying and testing the accused products, including, *inter alia*, Cisco's ONS products and Cisco's 6700 access devices, through Telcordia's OSMINE and technical audit services. *See, e.g.*, CSCO 0338-0172 (Master OSMINE Agreement dated August 17, 1998 requiring Cisco to make technical specifications and production versions of Cisco's

products available for Telcordia to study). This testing includes testing related to the functionality accused of infringing the patents in suit. *See, e.g.*, TELC 0650970-76.

Telcordia's letters to Cisco indicate it believed it had potential claims involving the '306 and '978 Patents at least as early as March 1994, which was more than 10 years before Telcordia asserted the '306 and '633 Patents against Cisco in July 2004. On March 14, 1994, Telcordia sent Robert Barr, counsel for Cisco, a letter regarding the '306 and '978 Patents, including a proposed license agreement. TELC 0269856. On June 16, 1994, Telcordia wrote to Cisco that it was "highly likely that the invention of U.S. Patent 4,893,306 [] is used in your products involving ATM/SONET, ATM/DS3 and ATM/DS1. Also, it is highly likely that the invention of Bellcore's U.S. Patent No. 5,260,978 . . . is also used in your ATM products." *See* TELC 0256444. Telcordia appears not to have responded to Cisco's December 6, 1994 response, seeking "the basis for [Telcordia's conclusion that Cisco's ATM products are likely to use these inventions."

Telcordia's letters to Cisco also indicate it believed it had potential claims involving the '763 Patent at least as early as September 2001, which was almost 4 years before Telcordia asserted the '763 Patent against Cisco in June 2005. On September 7, 2001, Telcordia sent Cisco a letter in which it stated that "we believe that certain Cisco products either infringe or induce other to infringe U.S. Patent[] 4,835,763." Telcordia also stated that these allegations were based on Cisco products complying "with the GR-1400 CORE specification." *See* TELC 0275546.

Cisco has suffered material evidentiary prejudice attributable to Telcordia's unreasonable and inexcusable delay. Telcordia's delay has hampered Cisco's ability to present a full and fair defense on the merits because the availability and memories of witnesses have

faded, and documents have been lost or destroyed over the long period of Telcordia's delay. For example, because the '306 and '763 Patents issued 14 and 16 years, respectively, before Telcordia asserted them against Cisco, many highly relevant documents, including Cisco design and product documentation and standards documents from the 1980s that may invalidate the asserted claims, no longer exist. This includes, for example, highly relevant documents from the CCITT/ITU-T. Prior to 1993, the CCITT/ITU-T routinely destroyed certain contribution documents after a particular amount of time had passed. It also appears from Telcordia's document production that Telcordia has destroyed highly-relevant documents over the years, including for example documents relating to Bellcore's work on Broadband ISDN in the 1980s and other technical documents, including without limitation, relevant laboratory notebooks and email correspondence. As another example, the testimony of Rick DePinho, Telcordia's corporate designee on licensing, shows that Telcordia no longer has copies of many of the records associated with the licenses it entered into and the royalties it received prior to 2000.

In addition, many witnesses, especially prior art witnesses, no longer remember all of the details regarding what was taking place in the telecommunications industry when the Patents-in-Suit were filed. Many of the Cisco engineers who designed and developed the accused products have retired or otherwise left Cisco. The named inventors' memories have also faded over the years, as well as the memories of the individuals from Cisco and Telcordia who would have been involved in negotiating a hypothetical reasonable royalty. At least one Telcordia witness with highly relevant knowledge and who would have been involved in negotiating a hypothetical reasonable royalty has passed away. Several of the prosecuting attorneys no longer have any of their files relating to prosecution of the Patents-in-Suit, and some of the inventors' notebooks appear to no longer exist. Cisco has suffered the same evidentiary

prejudice for the '633 Patent, because the original '978 Patent issued more than 10 years before Telcordia asserted the claimed subject matter against Cisco.

Cisco has also suffered material economic prejudice attributable to Telcordia's unreasonable and inexcusable delay, about which Robert Barr is knowledgeable. If Telcordia is successful, Cisco will incur damages and losses due to investments greater than any infringement liability that likely would have been prevented by an earlier suit. Since the '306, '763, and '978 patents issued over a decade ago, Cisco has expended substantial resources on the design, development, manufacture, and marketing of the accused products in this litigation, while reasonably presuming that Telcordia did not intend to assert the Patents-in-Suit. Had Telcordia interacted with Cisco differently, Cisco could have focused more of its efforts on developing other products rather than expending resources on the accused products in this litigation.

Cisco also could have made different business decisions and negotiated and structured acquisitions differently had Telcordia interacted with Cisco differently. For example, during the relevant time period, Cisco acquired five companies whose products are either accused of infringement or direct predecessors of products accused of infringement: Lightstream, Stratacom, SkyStone, Sentient, and Cerent.

Cisco has paid Telcordia at least \$95 million dollars since 1995 for OSMINE and technical audit testing and other services. See CSCO 0675-0001 to 0438. This includes hundreds of thousands of dollars contributed to Telcordia to develop Telcordia Generic Features highly relevant to the technology accused of infringement in this lawsuit. See TELC 3191694 (Cisco contributed to Telcordia's development of, *inter alia*, OC-192, STS to STS 1, SDHR, Interconnecting Rings, and NUT & Unprotected UPSR). Zachary Gilstein, Telcordia's corporate designee on testing, testified that Cisco is a good customer. If Cisco knew Telcordia intended to

sue Cisco, including for practicing technology Cisco helped Telcordia develop, it would have reconsidered its decision to pay Telcordia close to \$100 million for its testing services.

Cisco also invested in Tellium, a company spun-off from Telcordia, which developed Add-Drop Multiplexers that would fall within the scope of the '763 patent under Telcordia's infringement contentions. If Cisco knew Telcordia intended to sue Cisco for practicing technology Cisco helped Telcordia develop, it would have reconsidered its investment decision.

Cisco further states that Cisco's infringement claims are barred pursuant to the doctrine of equitable estoppel. Telcordia's conduct led Cisco to infer reasonably that Telcordia did not intend to enforce the Patents-in-Suit against Cisco, about which Robert Barr is knowledgeable. Cisco relied on that conduct, and, as a result, will be materially prejudiced if Telcordia is allowed to proceed with its infringement allegations now.

In addition to Cisco's economic and evidentiary prejudice as described above, Telcordia's ongoing certification and/or integration of Cisco products for resale to the Regional Bell Operating Companies starting at least as early as 1998 has prejudiced Cisco by causing it to infer that Telcordia would not assert the '763 patent against Cisco. Telcordia did not indicate to Cisco or Cerent that it believed it had claims involving the '763 patent until after Cisco acquired Cerent and Cisco and Cerent had developed the ONS series of products. *See, e.g.*, CSCO 0338-0172 (Master OSMINE Agreement dated August 17, 1998).

Telcordia also publishes interoperability standards for the telecommunications industry in the form of generic requirements without disclosing that it has actual and/or potential patent rights relating to these requirements. Telcordia recommended the use of the specific technologies it is asserting infringe the Patents-in-Suit in its generic requirements, and Cisco has

invested substantially in development efforts to ensure its products comply with Telcordia's generic requirements. Manufacturers of telecommunications equipment such as Cisco are required to adopt Telcordia's generic requirements before selling to most of the telecommunications industry. As explained above, Cisco has paid Telcordia millions of dollars to review its products for compliance with these generic requirements. Cisco has also paid Telcordia thousands of dollars to purchase copies of the generic requirements. Telcordia's involvement in setting de facto industry standards by publishing hundreds of generic requirements, including GR-253 and GR-1400, has led Cisco to infer that Telcordia would not bring suit against Cisco based on features Telcordia convinced the industry to use. Telcordia contends that the '763 patent is essential to practicing the GR-1400 standard, but did not disclose the existence of the '763 patent to Cisco until 7 years after GR-1400 was first published in 1994, and 12 years after the '763 patent issued in 1989.

Telcordia has also facilitated Cisco's sales of its products through its OSMINE, technical audit and other interoperability testing, including the interoperability testing performed at its Red Bank facility described above.

After its March 1994 letter to Cisco stating that it was "highly likely that the invention of U.S. Patent 4,893,306 [] is used in your products . . . [and] it is highly likely that the invention of Bellcore's U.S. Patent No. 5,260,978 . . . is also used in your ATM products," Telcordia did not contact Cisco again concerning these patents until April 1998. Over those nearly four years, Cisco reasonably came to believe that Telcordia, through its inaction, did not intend to enforce the any claims of the '306 or '978 Patents against Cisco.

In 1998, Telcordia discussed selling parts of its ATM patent portfolio, which includes the Patents-in-Suit, to Cisco. *See, e.g.*, TELC 0044893 ("I was thinking there may be a

way to outright sell large chunks of the patent portfolio outright to someone like Cisco. We have little use for patents on things like ATM and LAN switching hardware.”).

In its 2001 letter to Cisco, Telcordia did not identify the '306 Patent at all.

Throughout the years, Telcordia has collaborated with Cisco in many settings at which Cisco has shared its product features and capabilities. *See, e.g.,* TELC 0239061 (“The purpose of this meeting was to begin a technical discussion between AR and Cisco to see if there were areas of mutual interest where AR might offer research services to Cisco. We had a good technical discussion with Cisco in the areas of optical networking, network management, and Voice over IP. The subject of licensing didn’t really come up. . . . At the end of the day, I mentioned that we would still like to have a licensing discussion.”); *see also* TELC 0239237 (proposal to extend a prior optical networking collaboration between Cisco and Telcordia to study, *inter alia*, ring and mesh restoration strategies).

At a December 2002 meeting between Cisco and Telcordia, Telcordia identified the '633 and '763 Patents as patents “infringe[d]” by Cisco and the '306 Patent as a patent for which Cisco “may” need a license, but then proceeded to propose a joint “Cisco/Telcordia Research Lab.” *See* TELC0133864 (“Cisco and Telcordia could establish a long term collaborative research and development relationship.”).

Telcordia convinced Cisco to provide 7000 series routers for testing in Telcordia’s Red Bank interoperability lab by describing itself as an “impartial party [] to interpret standards, requirements, and resolve ambiguities.” *See, e.g.,* TELC 0210343; CSCO 0676-0747 to 0754. Cisco believed it was working with Telcordia to encourage the industry to practice the ITU and ATM Forum recommendations. *See, e.g.,* TELC 0210343 (“Cisco is committed to making ATM technology as open as possible. The testing at Bellcore will increase

user confidence that the ITU recommendations and ATM Forum agreements have resulted in real interoperability.").

Telcordia also participated as a member of various standards-setting bodies in the development of various telecommunications standards. As a member of these bodies, Telcordia had a duty to notify member organizations of any patent applications or patents relevant to the standards being developed by these bodies. Telcordia either failed to timely disclose or failed to disclose entirely patents or patent applications relevant to these standards. For example, Telcordia was a member of the ATM Forum Technical Committee SAA/CES Subworking Group, the International Telecommunications Union's Telecommunications Committee (ITU-T), and Committee T1 during the development of the ATM Forum standard af-vtoa-0078.000, the ITU-T Standard L363.1, and the ANSI T1.630 standards on SRTS, respectively. Telcordia encouraged ANSI and ITU-T to standardize SRTS in 1991, and the ATM Forum in 1995, without timely informing these standards-setting bodies of the '978 and/or '633 Patents or the patent applications from which the '978 and/or '633 Patents issued. For example, the '978 Patent was filed in October 1992, and issued in November 1993, but was not disclosed to the ATM Forum when it developed standard af-vtoa-0078.000 until February 1995. Cisco also participated as a member of these standards-setting bodies, about which Guy Federkow has knowledge. Telcordia's involvement in the standardization process led Cisco to infer that Telcordia would not bring suit against Cisco.

Cisco states that any claim for damages prior to filing this action also is barred to the extent Telcordia and its licensees have not complied with the marking requirements of 35 U.S.C. § 287. It is Telcordia's burden to show compliance with § 287. Telcordia has not identified any facts showing that its licensees, including the RBOCs and AT&T, have marked

products with the numbers of any of the Patents-in-Suit, or any efforts on behalf of Telcordia to require its licensees to do so. Licensees of Telcordia have not marked. For example, Alcatel (via its subsidiary Newbridge) was a licensee to the '633 patent and did not mark its products during the term of that license. Moreover, Rick DePinho, Telcordia's corporate representative on marking, was unable to identify any efforts on the part of Telcordia to determine whether its licensees of the Patents in Suit mark their products or any other actions by Telcordia to enforce that its licensees do so.

Cisco further states that Cisco's infringement claims relating to certain claims of the '633 Patent are barred pursuant to the doctrine of intervening rights. The asserted claims of the '633 Patent are substantially changed in scope compared to the original claims of the '978 Patent from which the '633 Patent reissued. Cisco and its predecessor Lightstream designed and developed the DCU ASIC chip from 1994 through 1995, which was after the grant of the '978 Patent in 1993 and prior to the grant of the '633 Patent in 2000. Cisco's 3600 series routers, 7200 series routers, Catalyst 8500 series switches, Lightstream 1010, and IP Transfer point platforms use the DCU ASIC for circuit emulation. Cisco invested substantially in developing these products from the time the '978 Patent issued in 1993, and the '633 Patent issued in 2000.

Cisco further states that Cisco's infringement claims are barred because Cisco has an implied license to practice the '306, '633 and '763 Patents. Specifically, Cisco is not liable for patent infringement to the extent the functionality accused of infringement by Telcordia is contained in off-the-shelf chips and other components of the accused products that are manufactured by third parties licensed by Telcordia to practice the Relevant Patents.

Cisco further states that Telcordia's infringement claims are barred by the doctrine of unclean hands and/or patent misuse because Telcordia impermissibly attempted to

broaden the scope of the '306, '633 and/or '763 Patents by various activities, including, but not limited to, its involvement in the standardization of certain technical specifications passed by various standards-setting bodies, its publication of generic requirements the practice of which it contends infringe its patents, and its certification of products for resale to the Regional Bell Operating Companies, all of which are discussed in more detail above.

Cisco further states that any claim for damages allegedly resulting from sales of Cisco products to AT&T or any of the Regional Bell Operating Companies is barred because those companies have "have made" licenses under the asserted patents.


Cisco further states that Telcordia has attempted to unfairly extend the limited scope of the monopoly granted under United States patent laws. For example, Telcordia is improperly seeking damages on complete platforms and systems when the accused functionality is contained within a small number of chips contained within these platforms or systems. Telcordia has previously acknowledged in correspondence with Cisco that damages are only appropriate on the chips within which the accused functionality is contained. *See, e.g., TELC 0269856* ("Attached is . . . a sample copy of a proposed license agreement. The license agreement as written presumes that the inventions are practiced in a dedicated chip or chipset. It might be modified slightly if the invention is practiced in some other fashion.").

Moreover, to the extent the Relevant Patents are relevant to standards promulgated by standards bodies, Telcordia failed to offer the Relevant Patents for license on reasonable and nondiscriminatory terms. Specifically, Telcordia has committed to license the '978 Patent on reasonable and nondiscriminatory terms to members of the ATM Forum. This commitment to license on reasonable and nondiscriminatory terms extends to the reissue of the '978 Patent, the '633 Patent.

Cisco expressly reserves the right to supplement its response to this interrogatory as Cisco's discovery and investigation in connection with this litigation continue.

Dated: May 26, 2006

MORRIS, NICHOLS ARSHT & TUNNELL LLP

/s/ Leslie Polizoti (#4299) 
Jack B. Blumenfeld (#1014)
Leslie A. Polizoti (#4299)
1201 North Market Street
Wilmington, DE 19899-1347
(302) 658-9200
Attorneys for Defendant Cisco Systems, Inc.

Of Counsel:

WEIL GOTSHAL & MANGES, LLP
Matthew D. Powers
Edward R. Reines
Jessica L. Davis
Sonal N. Mehta
Thomas B. King
201 Redwood Shores Parkway
Redwood Shores, CA 94065
(650) 802-3000

Ryan Owens
WEIL, GOTSHAL & MANGES LLP
767 Fifth Avenue
New York, NY 10153

EXHIBIT F

REDACTED

EXHIBIT G



Standard-Setting, Competition Law and the Ex Ante Debate

**Presentation to ETSI SOS Interoperability III Meeting
Sofia Antipolis, France
21 February 2006**

Gil Ohana

Cisco Systems Legal Department

Standard Setting and Competition Law

- SDO IPR policies address two different competition law concerns in standard setting:
 - Patent-holder gaining market power by failing to disclose patent or refusing to license disclosed patent on FRAND terms
 - Depends on FRAND commitment being meaningful constraint on patent-holder's legal right to charge licensees whatever it wants (*Broadcom v. Qualcomm*)
 - “Group boycott” among participants with collective market power who extort cheap licenses from holder of valuable patents
 - Where participants have market power, patent-holder cannot be compelled to license as condition of participating (Federal Trade Commission *Sanitary Engineering* Decision (1986), EU ETSI Investigation, 1993-94)